

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/051040

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01L29/778 H01L29/15

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 908 678 A (YAMAZAKI SHUNPEI) 13 March 1990 (1990-03-13)	1-6,9, 10, 13-17,21 14,22
Y	column 1, line 53 - column 2, line 22; figures 1,2 column 3, line 26 - line 38 column 2, line 33 - line 44	
X	US 5 055 887 A (YAMAZAKI SHUNPEI) 8 October 1991 (1991-10-08)	1-6,9, 11, 13-17,21 14,22
Y	column 1, line 66 - column 2, line 32; figures 1,2 column 3, line 57 - line 65 column 3, line 36 - line 49 column 1, line 66 - column 2, line 32 ----- -/--	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

5 October 2004

Date of mailing of the international search report

19/10/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Gröger, A

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/051040

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>US 4 695 857 A (BABA TOSHIO ET AL) 22 September 1987 (1987-09-22)</p> <p>column 6, line 3 - line 19; figures 1-14 column 9, line 34 - column 10, line 37 column 2, line 3 - line 4 column 5, line 34 - line 44</p>	1-6,14, 15,17, 18,21
X	<p>US 4 665 412 A (OHKAWA TIHIRO ET AL) 12 May 1987 (1987-05-12)</p> <p>column 2, line 29 - line 36; figures 1-5 column 3, line 1 - line 18 column 10, line 10 - line 31 column 13, line 39 - line 44 column 2, lines 64-66 column 12, line 3 - line 6</p>	1-5, 14-18,21
X	<p>KOJI Y ET AL: "THE FORMATION OF RESONANCE TUNNEL DIVICE BY GAMMA-AL2O3/SI MULTIPLE HETROSTRUCTURE" EXTENDED ABSTRACTS OF THE INTERNATIONAL CONFERENCE ON SOLID STATE DEVICES AND MATERIALS, JAPAN SOCIETY OF APPLIED PHYSICS. TOKYO, JA, vol. 2001, 26 September 2001 (2001-09-26), pages 588-589, XP001074916 sections 1,2 abstract</p>	1,3-5,9, 14,15, 17,18,21
X	<p>LU Z H ET AL: "Crystalline <math>\text{Si}</math>/<math>\text{SiO}</math>/rom an><math>2</math></math> quantum wells" APPLIED PHYSICS LETTERS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 80, no. 2, 14 January 2002 (2002-01-14), pages 255-257, XP012030900 ISSN: 0003-6951 abstract page 255, left-hand column, line 19 - line 32</p>	1,3-5,9, 14,15,21
X	<p>MEREU B ET AL: "Fowler-Nordheim tunneling in epitaxial yttrium oxide on silicon for high-k gate applications" 2002 INTERNATIONAL SEMICONDUCTOR CONFERENCE. CAS 2002 PROCEEDINGS (CAT. NO.02TH8618) IEEE PISCATAWAY, NJ, USA, vol. 2, 8 October 2002 (2002-10-08), - 12 October 2002 (2002-10-12) pages 309-312 vol.2, XP002299184 ISBN: 0-7803-7440-1 section 3, paragraph 1 abstract</p>	14,15, 17-21

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2004/051040

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4908678	A	13-03-1990	JP 2709374 B2	04-02-1998
			JP 63094680 A	25-04-1988
			JP 63094681 A	25-04-1988
			JP 63094682 A	25-04-1988
			US 5021839 A	04-06-1991
			US 5008211 A	16-04-1991
			US 5055887 A	08-10-1991
			US 4988634 A	29-01-1991
US 5055887	A	08-10-1991	JP 2709374 B2	04-02-1998
			JP 63094680 A	25-04-1988
			JP 63094681 A	25-04-1988
			JP 63094682 A	25-04-1988
			US 4908678 A	13-03-1990
			US 5021839 A	04-06-1991
			US 5008211 A	16-04-1991
			US 4988634 A	29-01-1991
US 4695857	A	22-09-1987	JP 1655033 C	13-04-1992
			JP 3015334 B	28-02-1991
			JP 60007121 A	14-01-1985
			JP 1463144 C	28-10-1988
			JP 60028273 A	13-02-1985
			JP 63009388 B	29-02-1988
			JP 1463145 C	28-10-1988
			JP 60028274 A	13-02-1985
			JP 63009389 B	29-02-1988
			JP 1644148 C	28-02-1992
			JP 3007139 B	31-01-1991
			JP 60052067 A	23-03-1985
			JP 60052055 A	23-03-1985
			JP 60052062 A	23-03-1985
			DE 3480631 D1	04-01-1990
			EP 0133342 A1	20-02-1985
			US 4792832 A	20-12-1988
US 4665412	A	12-05-1987	NONE	